

53 JUL 24 1992 MAIL ROOM
BLOCKADE OF PROTEIN C ACTIVATION REDUCES
MICROVASCULAR SURGICAL BLOOD LOSS

Abstract of the Invention

It has been discovered that by temporarily blocking one or more natural anticoagulants, such as the activation of intrinsic protein C, subsequent surgical blood loss from a microvascular surgical or traumatic wound can be substantially reduced. Other natural anticoagulants include thrombomodulin, antithrombin III, and tissue factor inhibitor pathway. The effects of protein C blockade were compared to the standard therapy, topical thrombin, and to the experimental topical agent, tissue thromboplastin. Domestic pigs were blindly pretreated with intravenous HPC₄ or saline then underwent partial-thickness skin graft harvesting to create a reproducible microvascular wound. It was found that blocking the activation of protein C significantly reduces surgical blood loss compared to saline control animals. Intravenous HPC₄ performed equally as well as topical thrombin or tissue thromboplastin. In addition, topical thrombin acted synergistically with HPC₄ to further reduce blood.